

Add to the Body of Knowledge about Normal and Abnormal Biological Functions and Behavior

Science Advances

Research on Rare Disease Provides Insight into How Sterol Consumption Affects Blood Cholesterol Levels (8)

Understanding of Cholesterol Metabolism Suggests New Line of Therapeutics (9)

Alzheimer's Genetic Factor is Linked to Sleep Apnea (10)

Genetic Mutations and Altered Proteins Influence Lymphangioleiomyomatosis (11)

Link Identified Between Ethnicity and "Asthma Genes" (12)

Studies Cast New Light on How Pneumonia Develops in AIDS Patients (13)

Mutation is Associated with Familial Interstitial Lung Disease (14)

Novel Protein Links Fanconi Anemia with Other Chromosome Instability Syndromes (15)

Functional Brain Imaging as a Tool to Understand Cochlear Implant Performance (16)

Exploiting Mouse Models of Disease: Discovery of Novel Deafness Genes and Genetic Interactions that Modify Hearing Impairment (17)

Hearing Parents of Deaf Children Favor Genetic Testing for Deafness (18)

An Essential Gene in Development of the Auditory and Vestibular Systems (19)

The Genetic and Environmental Etiology of Stuttering (20)

Identification of Genes Causing Deafness in Humans (21)

Disability Continues to Decline for Older Americans (22)

Increase in Maximum Age at Death (23)

Persistence of Cognitive Decline After Coronary-artery Bypass Surgery (24)

More African-Americans than Africans get Alzheimer's Disease (25)

Regeneration and Tissue Repair: Tapping the Potential of Stem Cells (26)

Growth Hormone Deficiency Promotes Longevity in Mice (27)

Structure-function Studies of the Insulin Receptor (28)

Genetic Alterations Can Cause Increased Life Span in Fruit Flies (29)

Gene Required for Full Reproductive Lifespan in Women (30)

BACE1 is the Major Beta-Secretase for Generation of Amyloid-beta Peptides in Mouse Brain (31)

Molecular Modulators of Memory (32)

Characteristics of Adult Neural Stem Cells (33)

Designer Mice Eat More, Weigh Less (34)

Only Two Genes Needed to Form Fish Heads (35)

Scientists Identify New Chink in a Parasite's Armor (36)

Hepatitis C Study May Lead to New Treatments (37)

Genetics of Cancer: Genetic Differences May Reduce Cancer Risk (38)

Benefits of DNA Replication Errors: How the Immune System Recognizes Invaders (39)

Combined Studies Show No Association of Exposure to DDE and PCBs with Breast Cancer Risk (40)

Insight into Molecular Pathways of Asthma (41)

Arsenic Toxicity (42)

Maintaining Enzyme Balance for Cellular Defense (43)

Molecular Insights into Inflammatory Disorders such as Rheumatoid Arthritis and Crohns (44)

Dietary Deficiencies May Lead to Birth Defects or Childhood Cancer (45)

A Protein Associated with Memory Loss in Alzheimer's Patients (46)

Male Infertility (47)

Insight into Preventing Damage Caused by Balloon Angioplasty and Other Procedures (48)

New Insights into the Development of Arthritis (49)
 Pathogenic Mechanism in a Novel Limb-Girdle Muscular Dystrophy (50)
 Role of Angiogenesis Hormone in Skeletal Muscle Hypertrophy (51)
 Molecular Causes of Painful Joints in Juvenile Rheumatoid Arthritis (52)
 New Insights into the Complex Effects of Estrogen on Bone (53)
 Association of COMT Genotype and Risk for Schizophrenia (54)
 Neuronal Synchronization (55)
 Specifying the Brain Structures Involved in Acute Fear versus Anxious Temperament (56)
 Brain Changes in Childhood Schizophrenia (57)
 His 'n' Her Brains: Molecular Designs for Sexual Differentiation (58)
 Imaging Glucose Metabolism to Streamline Treatment Efficacy Research in Alzheimer's (59)
 Deciphering Brain Molecules Responsible for Learning and Expressing Fear (60)
 Adjusting Receptor Numbers at Synapses (61)
 Neurogenesis: New Memories Require New Cells (62)
 Synaptic Vesicle Protein 2 (SV2) as a Key Regulator of Neurosecretion (63)
 Identification of a Potential Vulnerability Gene for Autism (64)
 Cytoskeletal Defect Causes Alexander Disease (65)
 How Huntington's Disease Kills Brain Cells (66)
 Genetic Findings Lead to Clues about Parkinson's Disease (67)
 Understanding How Trauma Damages Brain Cells (68)
 Mathematical Model Enables Estimation of Cost-Effectiveness of HIV/AIDS Treatment (69)
 Gene Variant is Associated with Reduced Risk for Heart Attack (70)
 Scientists Elucidate Structure of Mysterious Pathogen-Reacting Protein (71)
 New Model for Hepatitis C Virus Replication will Advance Basic Research and Drug Development (72)
 Amyloid- β and Implications for the Alzheimer's Disease Process (73)
 "Front Line" Immune Cells Have a Surface Protein that is Critical for Responding to a Specific Virus (74)
 Scientists Identify Gene Activated by Vaccine Enhancers (75)
 Researchers Identify Immune Cells that Help Transmit HIV Throughout the Body (76)
 Regulating the Development of the *Leishmania* Parasite's Infective Stage (77)
 Drugs, Food, and Gambling: Is there a Commonality? (78)
 MDMA Use During Pregnancy Can Impair Memory and Learning in Offspring (79)
 Despite Lower Initial HIV Blood Levels in Women Men and Women Develop AIDS at Similar Rates (80)
 Key Transcription Factor May Play Role in Transition from Voluntary Cocaine Use to Addiction (81)
 Even a Single Exposure to Cocaine Can Alter Brain Function (82)
 Progress Made in Understanding the Neurobiological Basis of Relapse and the Role that Memory
 Plays (83)
 A Person's Craving for Drugs Can Override All Other Motivational Priorities (84)
 Structure of a Gene Expression Machine (85)
 Microarray Analysis of Gene Expression in a Worm (86)
 Detection of Mutations in Transgenic Fish (87)
 A Promising Gene Therapy Vector (88)
 A Comparative Map of the Zebrafish Genome (89)
 New Methods for Analysis of Protein Phosphorylation (90)
 Transgenic Expression in Rhesus Monkey Placental Tissues (91)
 Cancer Virus Protein From Fish Induces Cancer-like Skin Lesions in Mice (92)
 Osteoarthritis and Effects of Estrogen Replacement Therapy on Cartilage (93)
 Adolescent Suicide: Identifying Risks and Protectors (94)
 Basic Fibroblast Growth Factor Stimulates Continued Growth of New Nerve Cells (95)

Brain Plasticity and the Very Early Perception of Speech (96)
 Bullying Among Middle and High School Youth (97)
 First National Data to Understand Where Children Drown (98)
 New Clues Regarding the Role of Bacteria Infections in Premature Births (99)
 Old Drug Offers New Hope to Victims of Childhood Neuro-Degenerative Disease (100)
 New Evidence Shows Risk for Adult Hypertension and Cardiovascular Disease Begins Before Birth(101)
 Activin Receptors – A New Anticancer Signal in Human Tumors (102)
 Silencing of Apoptosis Genes in Childhood Brain Tumors (103)
 Cell Phone Use Does Not Increase Risk of Brain Tumors (104)
 Identifying Gliomas That Will Respond to Chemotherapy (105)
 How Cells Sense Oxygen (106)
 Silicone Breast Implants Not Linked to Most Cancers or Increased Mortality (107)
 Newly Discovered Gene for Juvenile Polyposis May Lead to Better Cancer Prevention and Clues about
 What Triggers Other Gastrointestinal Cancers (108)
 Molecular Profiles Identify Genetically Distinct Subsets of Cancerous Tumors (109)
 Medullary Pancreatic Cancer: A New Classification for an Old Disease (110)
 New Findings on *BRC42* Mutations and Hereditary Ovarian Cancer (111)
 Racial and Ethnic Differences in Advanced-Stage Prostate Cancer (112)
 Genetic and Structural Studies of Apert Syndrome (113)
 Human Brain's Natural Painkiller System in Action (114)
 Interaction Between Genes having Tumor Suppressor and Oncogenic Functions (115)
 Mouse Model Sheds Light on Hereditary Dental Defect (116)
 Natural Genetic Transformation of Oral Bacteria (117)
 Scientists Sequence Genome of Major Periodontal Disease Bacterium (118)
 Bringing Sleep into Focus (119)
 Where does Visual Plasticity Occur in the Brain? (120)
 The Timing of Visual Responses to Light (121)
 Early Eye Development (122)
 Discovery of Gene for Hallervorden-Spatz Syndrome (123)
 Protection of the Lens by α -Crystallin (124)
 Myocilin in Aqueous Humor (125)
 Growth Factors Prevent Alcohol's Brain Damage in Living Mammal Fetus (126)
 An Appetite for Alcohol (127)
 Craving for Alcohol Activates Specific Brain Areas in Alcoholics (128)
 Alcoholics Have Changes in Activity of Brain's "White-Matter" Genes (129)
 Closing in on Genes for Alcoholism (130)
 New Non-invasive Method to Diagnose *Pneumocystis carinii* in Patients with HIV and Other
 Immunosuppressive Disorders (131)
 Resistance Testing to Optimize Antiretroviral Therapy in HIV-Infected Patients Who Have Failed Prior
 Therapy (132)
 Nitric Oxide Treatment Replenishes Blocked Nitric Oxide Synthesis and Maintains Vascular Blood
 Flow (133)
 Mosquito Larva, *Anopheles arabiensis*, Growth in the Presence of Maize Fields (134)
 Longitudinal Follow-up of Neonatal Intensive Care Unit Survivors (135)
 Predicting Left Ventricular Hypertrophy in Young Hypertensive African-American Men (136)
 Mouse Models of Insulin Resistance (137)
 Integration of Diverse Signals Regulating Appetite and Body Size by the Brain (139)
 Increasing Severity of Diabetes in Younger Native Americans (141)

Improved Long-Term Survival for Patients with Type 1 Diabetes (142)
 Cholesterol Transport in Niemann-Pick Type C Disease (143)
 Beta Cells that are Resistant to Immune-mediated Destruction (144)
 Molecular Mechanisms of Cellular Copper Metabolism (145)
 Effect of the Protease Inhibitor Indinavir on Import of Glucose into Muscle (146)
Helicobacter pylori Strains Influence Host Inflammatory Responses (147)
 What Causes Polycystic Kidney Disease? (148)
 Advances in Understanding the Function, Structure, and Genetics of the Urinary Bladder (149)
 Genetic Link Discovered for IgA Nephropathy (150)
 HIV-associated Kidney Disease and the Kidney as a Reservoir of Persistent HIV Infection (151)
 Surprisingly Broad Potential Fates for Adult Stem Cells (152)
 Hematopoietic Differentiation of Rhesus Monkey Embryonic Stem Cells in Culture (154)
 Mouse and Rat Genome Sequences: Tools for Understanding the Human Genome (155)
 Technique Can Distinguish Hereditary from Non-Hereditary Tumors: May Lead To New Diagnostic Tests for Breast Cancer (156)
 Advances in Prostate Cancer Research (157)
 Human Genome Project Develops Multimedia Educational Kit for High School Students and Public (159)
 Gene Chips Accurately Diagnose Four Complex Childhood Cancers (160)
 A Mouse Model Provides Insights about the Inner-ear Defects in Pendred Syndrome, a Genetic Disorder Associated with Deafness and Goiter (161)
 Scientists Find a New Tumor Suppressor Gene Involved in Breast, Prostate and Other Cancers (162)

Science Capsules

Gene Therapy May Prevent Damage From Stroke (163)
 Identifiable Illnesses from Hepatitis C Virus (HCV) Infection Take Many Years to Develop (163)
 Where We Live Affects Our Cardiovascular Health (163)
 “Early to Bed, Early to Rise” Gene Discovered (164)
 Researchers Uncover a Secret of Burning Fat (164)
 Understanding Bacterial Interactions has Potential to Help Cystic Fibrosis Patients (164)
 Sensitivity to Salt Increases Risk of Early Death (165)
 Gene Therapy Against Free Radicals May Prevent Vascular Damage (165)
 Factors Influencing Lung Development and Injury Identified (165)
 The Impact of Family Help on the Timing of Placement of Cognitively Impaired Elders in an Institution (166)
 Decline in Severe Cognitive Impairment Among Older Americans (166)
 Comorbidity and Breast Cancer in Older Women (166)
 Aortic Stiffness and Visceral Adiposity in Older Adults Enrolled in Health ABC (167)
 Cardiovascular Disease, Interleukin-6, and Risk of Mortality in Older Women (167)
 Importance of Local Estrogen Biosynthesis in Improved Cardiovascular Function (167)
 Caloric Restriction Has No Adverse Effects on Skeletal and Reproductive Health in Rhesus Monkeys (168)
 Familial Patterns and Protective Factors in Exceptional Longevity (168)
 Chromosome 10 Contains New Risk Factor Genes for Late Onset Alzheimer’s Disease (169)
 RANTES Potentiates Antigen-Specific Peripheral and Mucosal Immune Responses (169)
 Old and Young Humans Produce Similar Types of Antibodies (170)
 Protein Switching Between Inactive and Active States (170)
 Largest Membrane Protein Domain (19kDa) Determined by Solution NMR (170)
 Key Mechanics of Cell Membrane Fusion Revealed (171)

On the Way to Making a Pancreas (171)
 Drosophila Study Implicates New Genes in Human Neurodegenerative Disorders (171)
 Sleepy Genes (171)
 Controlling Zinc in Cells (172)
 Discovery of a Key Step in Auxin Biosynthesis through Comparative Biochemistry (172)
 Characterization of the Control of Telomeres in Drosophila (172)
 Insight into How Clots are Dissolved (172)
 Effect of Normal and Mutant MARCKS Protein on Cell Adhesion: Evidence for a Role in Brain Development (173)
 Discovery of a New Cytochrome P450 Arachidonic Acid Hydroxylase in Brain (173)
 Imaging Blood-Brain Barrier Function (173)
 Regulation of Chondrocyte Development (174)
 Decorin in Lyme Arthritis (174)
 Green Tea and Cancer Prevention (175)
 Molecular Genetic Basis of Sporadic Basal Cell Skin Cancer (175)
 New Biologic Markers Characterized for Scleroderma (176)
 A New Pathway to Increased Bone Density in Mice (176)
 Difficulty Extracting Social Information from Faces Characterizes Autism (177)
 Suppressing Unwanted Memories by Executive Control (177)
 ADHD in Girls (178)
 Making Employers Care about Mental Disorder Related Disability: The Problem of “Presenteeism”(178)
 Molecules Mediating Synaptic Maturation Identified (179)
 Cortical Plasticity Following Visual Experience (179)
 Turning Perception into Action (179)
 Overcoming Barriers to Access of Antiviral Therapy in Racial and Ethnic Minorities Infected with HIV (180)
 Visual Discrimination Learning Requires Sleep After Training (180)
 Recognition Memory (181)
 How the Brain Encodes Abstract Rules (181)
 A Role for Endogenous Cannabinoids in the Brain (181)
 Transgenic Rat Model of the AIDS Virus (182)
 Familial Dysautonomia Gene Discovery (182)
 Flies and Brain Disorders (182)
 Glia Regulate Synapses (183)
 Glial Cells may be Culprits in Neuropathic Pain (183)
 Visualizing Migraine Auras (183)
 Pain Perception (184)
 New Insights into Neurotransmitter Release (184)
 New Model System for the Study of West Nile Virus Encephalitis (184)
 Gene Abnormality for Cystic Fibrosis May Be Responsible for Development of Chronic Sinusitis (184)
 Inherited Mutation Linked to Increased Incidence of Lymphoma (185)
 Exposure to High Levels of Cat Allergen Results in Protective Immune Response (185)
 Identification of an Induced Cell Surface Channel on Red Blood Cells Infected with Malaria Parasites (185)
 HIV Can Bind Efficiently to Immune Cells that Lack CD4, the Primary HIV Receptor Molecule (186)
 Determination of Differences in Cytotoxic T-Lymphocyte Responses in Early and Chronic HIV Infection (186)
 Viral Fusion: New Clues on Influenza Entry into Cells (187)

Regulatory Pathway Identified that Controls Resistance to the Beta-Lactamase Class of Drugs in *Staphylococcus aureus* (187)

Controlling Inflammation by a Synthetic Molecule that Targets the Heart of the Process (187)

A Molecule Discovered on Immune Cells Plays a Central Role in Generating Antibodies (188)

Intravenous Immunoglobulin Prevents Inflammation through an Inhibitory Receptor Molecule (188)

Initiation of Smoking: Genes Play An Important Role (188)

Potential New Target for the Treatment of HIV (189)

Prenatal Exposure to Methamphetamine Increases Neurotoxic Risk for Male Offspring (189)

Morphine Can Alter Immune System Function: The Role of Substance P (189)

Hepatitis C Risk Is Not Limited to Those Who Inject (189)

Researchers Develop Antibodies that Recognize Hepatitis C Virus (190)

Experimental Animal Model Reveals Ability of Soy to Reduce Pain (190)

Treatment for Persistent Asthma (191)

Orange Juice Alters the Metabolism of Certain Drugs (191)

Improving Understanding of Placenta Development (191)

Body Position Alters Heart Rate (192)

A Role for “Junk DNA:” Functional Significance of Repetitive DNA Elements in Eukaryotic Genomes (192)

Genomic Analysis of Radiation-resistant Bacterium: A Model Organism for Understanding Mechanisms of DNA Damage and Repair (192)

Bioinformatics Tools Provide Insight into the Mechanisms of Genome Evolution and Bacterial Pathogenesis (193)

Multilateral Initiative on Malaria (193)

Understanding Aromatase in Breast Cancer (194)

Markers for the Blood Vessels of Human Cancers (194)

A Functional Atlas for *Caenorhabditis elegans* (195)

Clues to Cancer Recurrence (195)

Chromosomal Instability in Cancer (195)

Protein Indicates Double-stranded DNA Breaks (196)

Prostate Cancer in African-American Men (196)

Identification of a Novel Enzyme Active in Breast Cancer (197)

Steroid/Nuclear Receptors Function by Hit-and-Run (197)

Source of Gene Mutations Linked to Cancer (198)

Autoantigens in Sjögren’s Syndrome (198)

Effect of Interleukin -1 β in Periodontitis (198)

Gene Inhibits Invasion and Metastasis of Cancers (199)

New X-linked Recessive Immunodeficiency Defined (199)

Potential Role of Bone Proteins in Cancer (199)

Bacterial Interactions within Dental Plaque (200)

Self-Assembly Properties of Recombinant Engineered Amelogenin Proteins (200)

The Structure of Cell Membrane Water Channels (201)

Suppression of Specific Molecular Targets Improves the Success Rate of Corneal Transplants (201)

Genetic Ocular Disease of Native Americans (201)

Lens Cell Survival (202)

A World of Color (202)

Sight and Consciousness (203)

New Target for Therapy in Age-related Macular Degeneration (203)

Phagocytosis Pathway Dysfunction in Human Retinal Disease (203)

Hearing and Looking (204)
 How do We Know that We've Seen? (204)
 Speed of Light Responses (205)
 A New Ethical Framework for the Conduct of Placebo Controlled Trials (205)
 White Blood Cell Types that Have a Hand in Fighting Infections (205)
 HIV Infection Increases the Risk of Transmission of Herpes and Cytomegalovirus (CMV) to Sexual Partners and Newborns (206)
 Clinical Manifestations of HIV Infection in Thailand (207)
 Understanding HIV-Related High-Risk Sexual Behaviors Among Women in Bogota, Columbia (207)
 HIV Protease Inhibitors Impair Fat Cell Development (207)
 In-Utero Exposure to Diabetes Increases Offspring's Risk of Diabetes and Obesity (208)
 Genetic Influence in Obesity and the Metabolic Syndrome (208)
 Clinical Expression of Hereditary Pancreatitis (209)
 Risk Factors for Primary Biliary Cirrhosis (210)
 Brain Activity in Patients with Irritable Bowel Syndrome (210)
 Gene Linked to Kidney Disease Caused by Diabetes (210)
 Decade of ELSI Research Conference (211)
 African-American Hereditary Prostate Cancer Study Network (211)
 African-America Diabetes Mellitus Study (AADM) (212)
 A Mouse Model for a Cancer Syndrome that Results in Multiple Endocrine Tumors (212)
 Usher Syndrome Type 1D (213)
 Functional Connectivity Between Brain Areas During the Visual Processing of Word and Word-Like Stimuli (213)

Stories of Discovery

How Sweet It Is! (214)
 The Declining Disability of Older Americans (215)
 The Human Genome, Chapter Two (218)
 Environmental Agent Gives Clues to Arthritis, Depression, and Cancer (220)
 How Ovaries Fail (222)
 Determining the Genetic Cause of Drug-Resistant Malaria (224)
 Accessing the Human Genome: Public Information Resources as Discovery Tools (226)
 Providing Sight to Dog Born Blind (229)
 Free Radicals: A Link Between Alcohol and Liver Damage (231)
 Understanding Disease-Environment Interactions in Global Amphibian Decline (234)
 A Fifteen Year Investment in Caregiving Research (235)
 Bacterial Pili – Molecular Initiators of Bladder and Kidney Infections (237)
 Genetic Breakthroughs in the Study of Crohn's Disease (240)